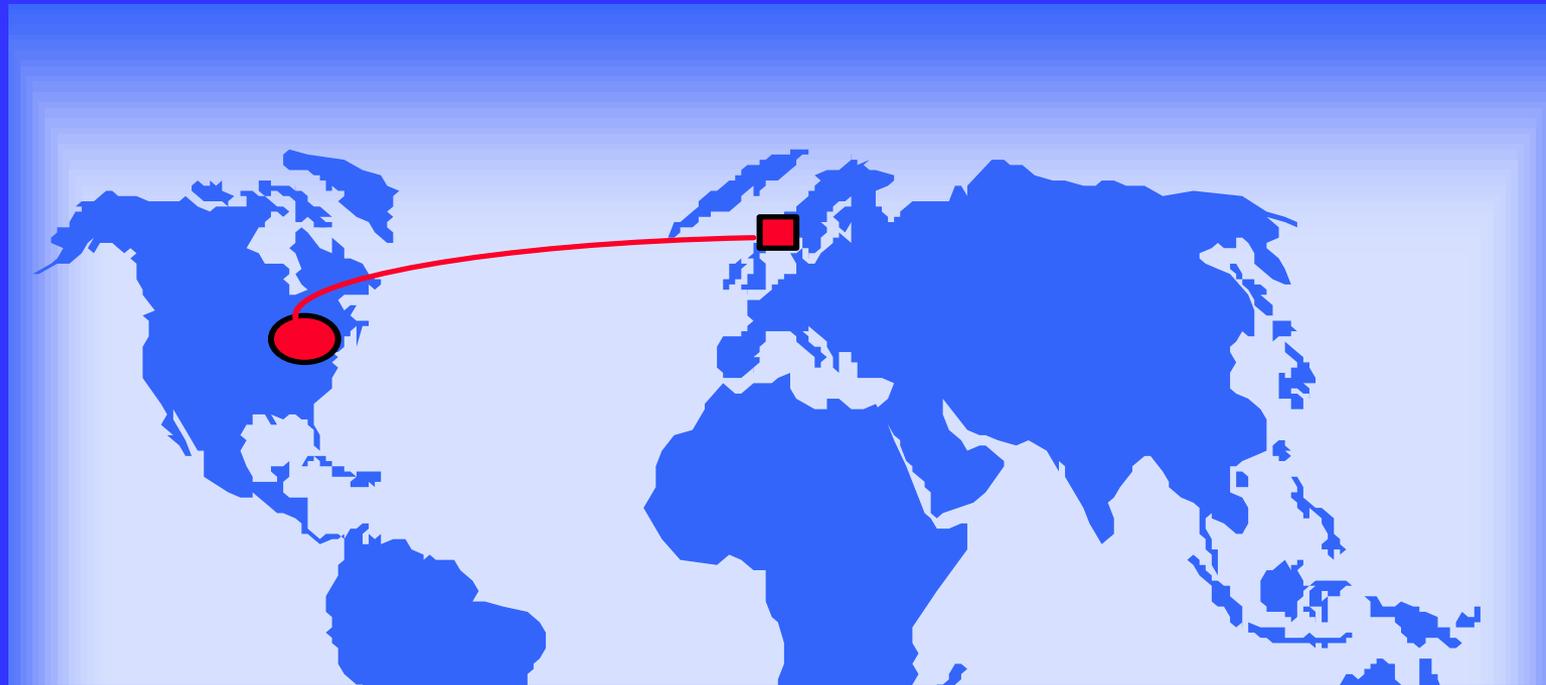


Diabetes and incontinence data: The Norwegian EPINCONT study



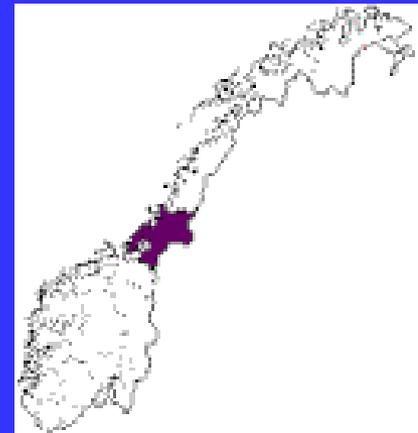
Steinar Hunskaar and Yngvild S. Hannestad
Section for General Practice
University of Bergen, Norway

Steinar Hunnskaar, MD PhD

- **Professor in General Practice, University of Bergen, Norway**
- **Chairman, Epidemiology Committee, WHO/IUCC 1st, 2nd and 3rd Consultation on Incontinence, next in Monaco, June, 2004**
- **Several population and general practice based epidemiological studies on incontinence**

HUNT: The Nord-Trøndelag Health Survey 1995-97

- Questionnaires, examination and blood sampling
- Largest in Norway
- 100 000 persons aged 20+, 46 709 women
- 74% participation for women (N= 34 646)
- Office and bus based screening stations



Statens
helse-
undersøkelser



INNGANG



The EPINCONT study

- The Norwegian **EPINCONT** Study: Epidemiology of Urinary Incontinence in Nord-Trøndelag
- Questionnaire distributed at the screening station, returned by mail
- 27 936 women answered ; 80 %
- 6 876 (25%) incontinent
- 21 060 (75%) not incontinent

Key variables for incontinence:

(I) ICS definition and type

- **Any incontinence**
- **Symptom based diagnosis**
(validated) of stress, urge, mixed, or other UI

Key variables for incontinence: (II) Severity

■ **Severity index (validated):**

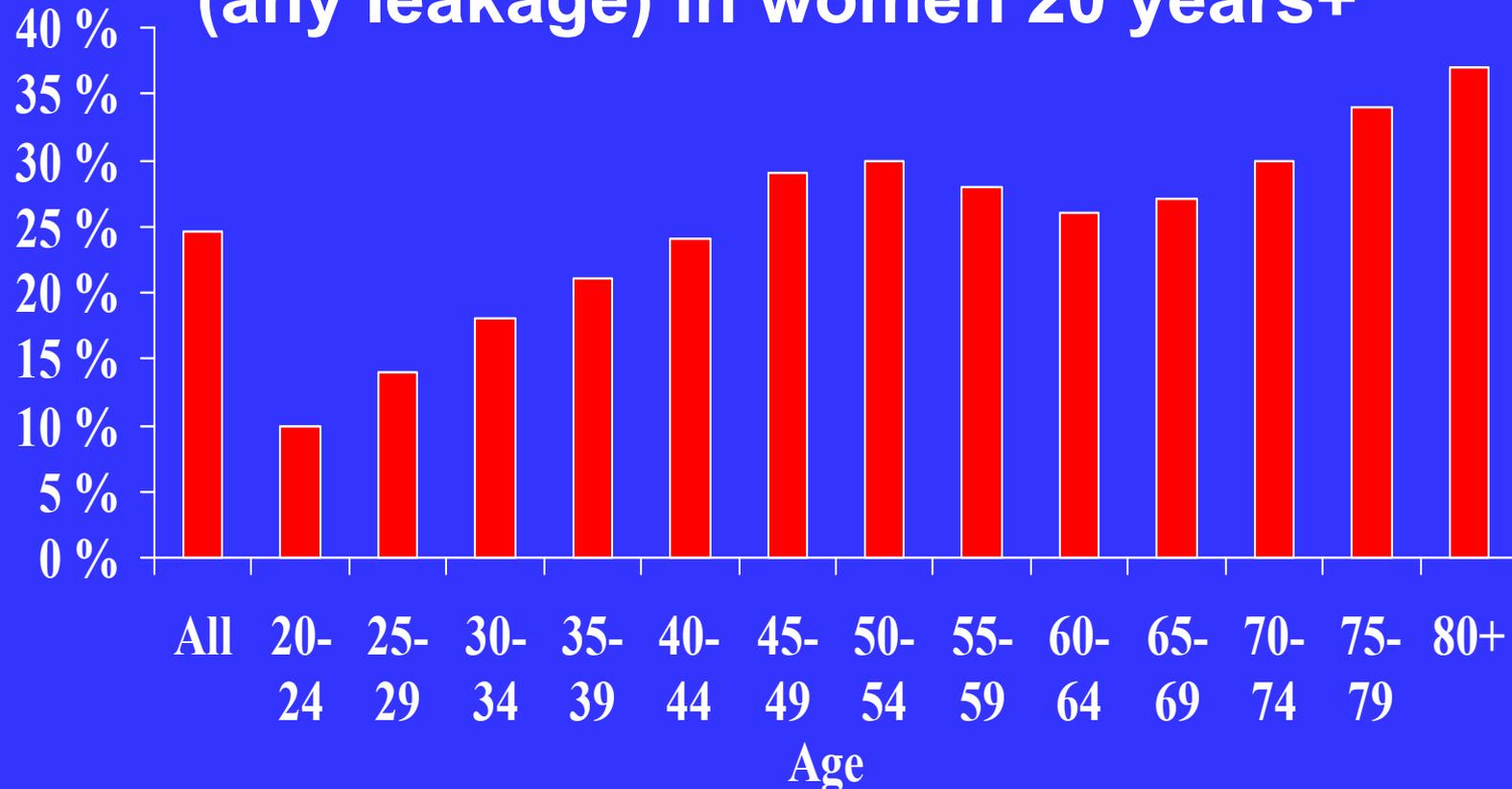
Frequency (4) x amount (2)

Index values:

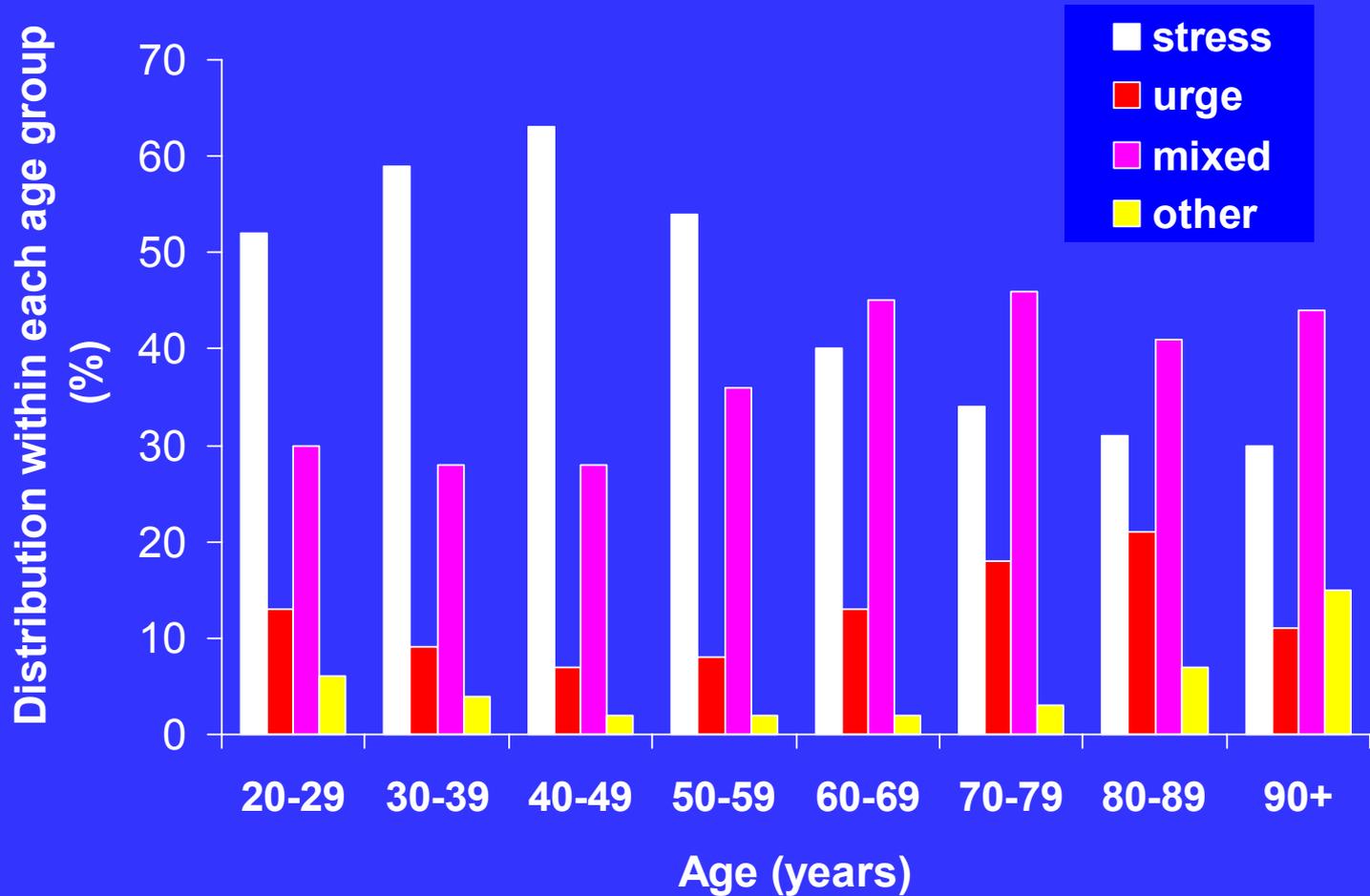
- Slight incontinence (6 g/24h)
- Moderate incontinence (17 g/24h)
- Severe incontinence (56 g/24h)

First: Incontinence

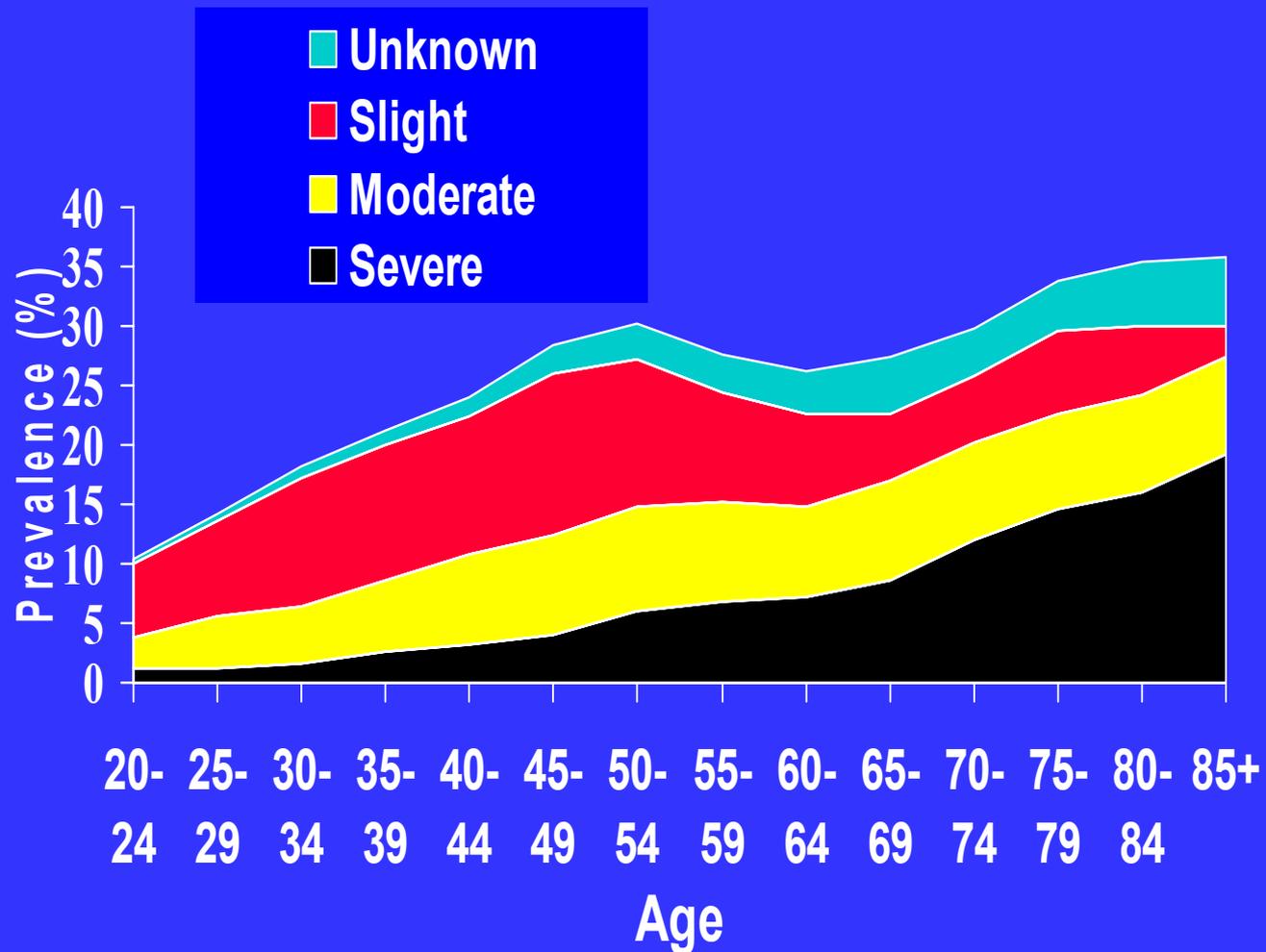
Prevalence of urinary incontinence (any leakage) in women 20 years+



Distribution of different types of incontinence within each age group



Prevalence of urinary incontinence by age group and severity



Major analyses so far

- **Prevalence, type and severity**
 - J Clin Epidemiol 2000; 53: 1150-7
- **Life style factors and UI**
 - Br J Obstet Gynaecol 2003; 110: 247-54
- **Parity and delivery factors**
 - Obstet Gynecol 2001; 98: 1004-10
 - N Engl J Med 2003; 348: 900-7
 - Am J Obstet Gynecol 2003; 189: 1268-74
- **Familial risk**
 - Submitted

Then:

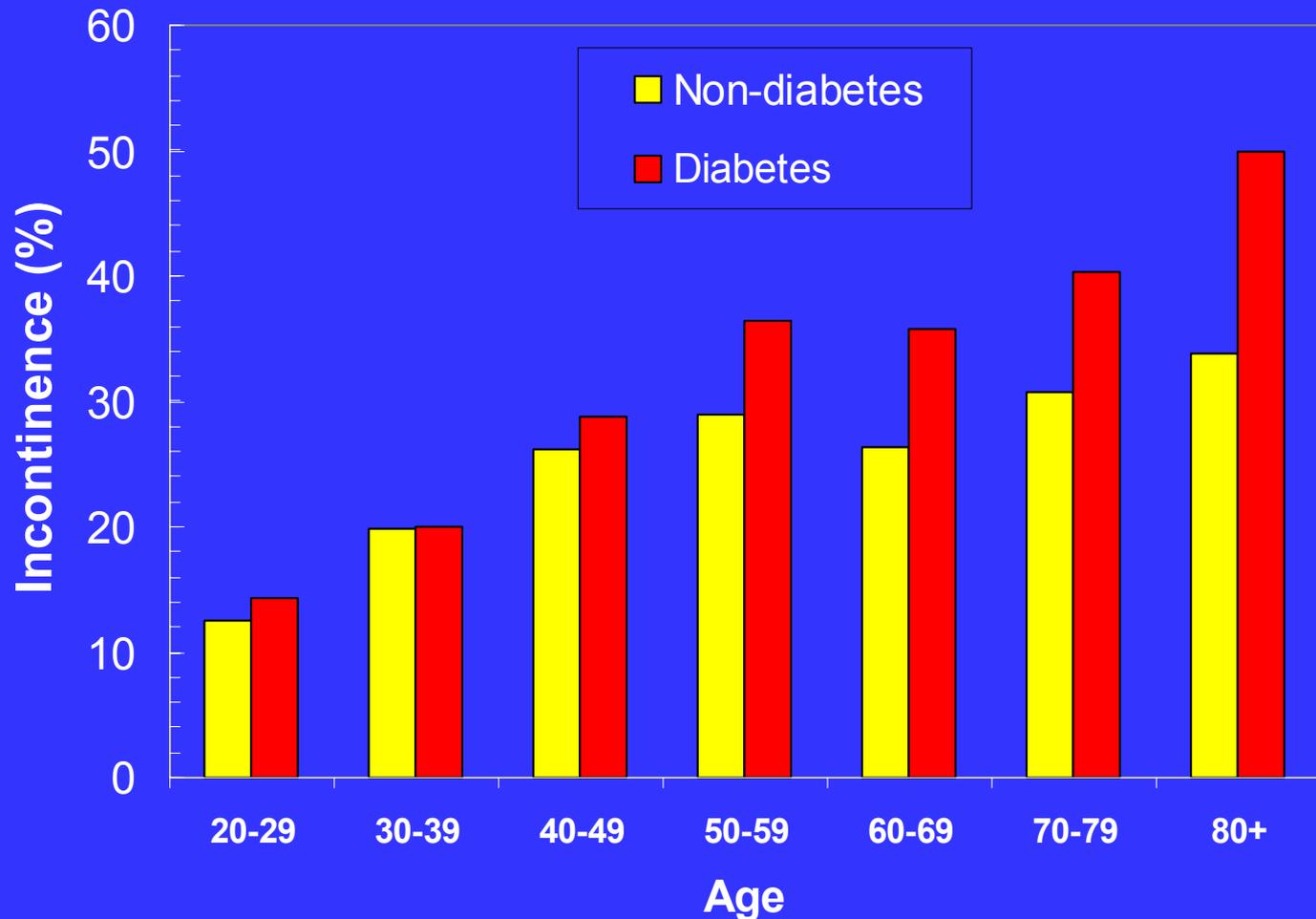
Diabetes patients in EPINCONT

- **731 women with self reported diabetes and complete UI data**
- **On most patients:**
 - **Type 1/type 2 based on C-peptid, anti-GAD, blood sugar and insulin treatment, duration of insulin treatment, duration of DM, HbA1c, blood sugar (non-fasting), Total-cholesterol, HDL, TG, S-creatinin, microalbuminuria, self management**
 - **Many other variables on comorbidity etc**
 - **Complications: Not optimally covered**

Women with diabetes

Age groups	No. with diabetes	Incontinence N (%)
20-29	14	2 (14%)
30-39	30	6 (20%)
40-49	59	17 (29%)
50-59	104	38 (37%)
60-69	137	49 (36%)
70-79	277	112 (40%)
80+	110	55 (50%)
Total	731	279 (38%)

Incontinence among women with and without diabetes



Planned studies

- **Prevalence of urinary incontinence by type (urge, stress, and mixed) and severity among women with diabetes**
- **Risk factors associated with incontinence, especially aspects of diabetes severity, glycemic control, and presence of complications**
- **Other? Open for discussion!**